



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,532	04/15/2004	Werner Mezger	10191/3782	8237
26646	7590	12/30/2004	EXAMINER	
KENYON & KENYON ONE BROADWAY NEW YORK, NY 10004			RIDDLE, KYLE M	
			ART UNIT	PAPER NUMBER
			3748	

DATE MAILED: 12/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/825,532	Applicant(s) MEZGER ET AL.	
	Examiner Kyle M. Riddle	Art Unit 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input checked="" type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>04152004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings filed on 15 April 2004 are acceptable subject to correction of the informalities indicated on the attached "Notice of Draftsperson's Patent Drawing Review," PTO-948. In order to avoid abandonment of this application, correction is required in reply to the Office action. The correction will not be held in abeyance.

Claim Objections

2. Claim 11 is objected to because of the following informalities: Page 19, claim 11, line 1 of the claim, the claim is dependent on claim 9, but appears to the examiner that it should depend from claim 10 since the claim refers to a "control unit" and not a computer program. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Inoue et al. (U.S. Patent 6,330,870).

Re claims 1, 8-10, Inoue et al. disclose a variable valve timing system comprising:

- a variable timing adjustor 18 controlled by the engine control circuit 18 using cam angle sensor 19 and crank angle sensor 20 to calculate real valve timing versus a target camshaft phase (column 9, lines 22-41);

Art Unit: 3748

- determining a target valve timing based on sensor input and calculating a real valve timing, and controlling the hydraulic control valve 29 of the valve timing adjustor 18 to adjust the real valve timing to the target valve timing (column 12, lines 10-23);

- determining whether the lock pin has been released (column 17, lines 49-55, column 18, lines 62-67 with column 19, lines 1-2, column 23, lines 16-17, lines 30-40);

- executing via a microcomputer of the engine control circuit 18 the computer programs stored in the packaged ROM or storage media (column 18, lines 62-67 with column 19, lines 1-2).

Re claim 2, Inoue et al. disclose the valve timing adjustor 18 maintained in the locked position until the coolant temperature is outside a predetermined temperature range (column 30, lines 19-25) or based on engine temperature or temperature of the oil (column 30, lines 45-47), or the variable valve timing adjustor 18 is set in the vicinity of the lock position when the adjustor 18 is judged to be poor or the coolant temperature is less than a predetermined range (column 22, lines 5-25), or failure of the lock release is detected (column 17, lines 49-55, column 18, lines 62-67 with column 19, lines 1-2, column 23, lines 16-17, lines 30-40).

Re claim 3, Inoue et al. disclose setting the lock position to an intermediate phase position suited for an engine start reference position (column 11, lines 6-11), and when adaptation has not occurred or it is judged that the valve timing adjustor operation is poor, operating the valve timing adjustor 18 to the predetermined reference locked position (column 22, lines 4-25).

Re claim 4, detecting an independent locking condition when the phase is in the vicinity of the intermediate lock position based on target angles (setpoints) (column 23, lines 30-60).

Art Unit: 3748

Re claim 5, detecting a failure of the lock release by determining phase angles over a predetermined time period (column 17, lines 49-57, column 23, lines 65-67 with column 24, lines 1-4, column 30, lines 19-22, column 37, lines 36-43).

Re claims 6, 7, and 11, initiating a locking release program, detecting if locking has been released, and repeating the release procedure if failure of locking is detected (column 17, lines 49-55, column 23, lines 3-7, lines 61-67 with column 24, lines 1-4, column 30, lines 19-23, column 37, lines 36-43).

Conclusion

5. The IDS (PTO-1449) filed on 15 April 2004 has been considered. An initialized copy is attached hereto.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of 2 patents.

- Wada et al. (U.S. Patent 6,758,176) disclose a valve timing control apparatus with an arithmetic means for determining a current for unlocking procedures.

- Takahashi et al. (U.S. Patent 6,761,138) disclose a valve timing control apparatus determining a lock or unlocked state based on relative angle position and engine coolant temperature.

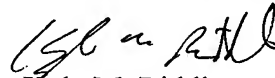
Communication

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kyle M. Riddle whose telephone number is (571) 272-4864. The examiner can normally be reached on M-F (07:30-5:00) Second Friday Off.

Art Unit: 3748

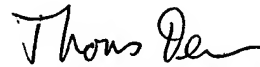
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kyle M. Riddle
Examiner
Art Unit 3748

kmr



THOMAS DENION
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700